

## CLAIMS:

1. An X-ray microscope which includes a device for generating X-rays, which device is provided with:

- \* means for producing a fluid jet (2),
  - \* means for forming a focused radiation beam whose focus is situated on the fluid jet,
- characterized in that the focused radiation beam consists of a beam (6) of electrically charged particles.

2. An X-ray microscope as claimed in Claim 1, wherein the beam of electrically charged particles is formed by an electron beam.

3. An X-ray microscope as claimed in Claim 1, wherein the cross-section of the fluid jet (2) in the direction of the focused beam is smaller than that in the direction transversely thereof.

4. An X-ray microscope as claimed in Claim 1, wherein the fluid jet consists mainly of liquid oxygen or nitrogen.

5. An X-ray microscope as claimed in Claim 1, wherein the means for producing a focused beam of electrically charged particles are formed by a standard electron gun for a cathode ray tube, the X-ray microscope also being provided with a condenser lens (40) which is arranged between the fluid jet (2) and the object (14) to be imaged by means of the X-ray microscope.

6. An electron microscope which produces a focused electron beam (6) and is provided with a device for generating X-rays, characterized in that the device includes:

- \* means for producing a fluid jet (2),
- \* means for directing the focus of the electron beam (6) onto the fluid jet.

7. An electron microscope as claimed in Claim 6 which is provided with an X-ray microscope and wherein the device for generating X-rays acts as the X-ray source for the X-ray microscope.
- 5 8. An electron microscope as claimed in Claim 6 or 7, the electron microscope being a scanning electron microscope.